6

order in which acts of the method are performed, but are used merely as labels to distinguish one claim element having a certain name from another element having the same name (except for use of ordinal terms), to distinguish the claim elements.

What is claimed is:

1. An electronic apparatus, comprising:

at least two camera devices; and

a processing device, determining a first distance to a surface formed by the two camera devices and a second distance to the surface in response to detecting an object positioned at a first time by the two camera devices, determining a third distance from the object positioned at a second time to the surface, and determining a depth in a virtual space corresponding to the object positioned at the second time according to the first distance, the second distance, and the third distance,

wherein the second time is later than the first time, and the third distance is longer than the first distance and shorter than the second distance.

2. The electronic apparatus of claim 1, wherein the two camera devices are disposed at a fourth distance from each other, and the processing device further obtains two images of the object at each of the first time and the second time via the two camera devices, and the object in one of the images captured at the first time or the second time is positioned at a fifth distance from the object in the other one of the images.

3. The electronic apparatus of claim 2, wherein the first distance is determined according to the fourth distance and a respective angle of view corresponding to each of the two camera devices, and the second distance or the third distance is determined according to the fourth distance and the corresponding fifth distance.

4. The electronic apparatus of claim 2, wherein the processing device further determines a sixth distance from a user's face positioned at the first time to the surface, and the second distance is determined by subtracting a predetermined length from the sixth distance, and the first distance, the third distance, or the sixth distance is determined according to the fourth distance and the corresponding fifth distance.

5. The electronic apparatus of claim 2, wherein the first distance is determined according to the fourth distance and a respective angle of view corresponding to each of the two camera devices, and the processing device further determines a sixth distance from a user's face positioned at the first time to the surface, and the second distance is determined by subtracting a predetermined length from the sixth distance, and the third distance or the sixth distance is determined according to the fourth distance and the corresponding fifth distance.

6. The electronic apparatus of claim 1, wherein the first distance and the second distance correspond to a farthest end and a nearest end of the virtual space, respectively.

7. The electronic apparatus of claim 6, wherein the processing device further divides a length from the second distance to the first distance into a plurality of sections, each of which corresponds to a predetermined depth in the virtual space, and determines the section where the third distance is located, and the depth equals the predetermined depth corresponding to the section.

8. The electronic apparatus of claim 6, wherein the processing device further divides a length from the second distance to the first distance into a plurality of sections and determines the section where the third distance is located, and the depth is determined using the following formula:

$$\frac{L'_{near} - L_{current}}{L'_{near} - L'_{far}} \times T_x,$$

wherein L_{far}' is the farthest end of the section, L_{near}' is the nearest end of the section, $L_{current}$ is the third distance, and T_x represents the total length of the section.

9. A method for use in an electronic apparatus comprising at least two camera devices, comprising:

determining a first distance to a surface formed by the two camera devices and a second distance to the surface in response to detecting an object positioned at a first time by the two camera devices;

determining a third distance from the object positioned at a second time to the surface, wherein the second time is later than the first time, and the third distance is longer than the first distance and shorter than the second distance; and

determining a depth in a virtual space corresponding to the object positioned at the second time according to the first distance, the second distance, and the third distance.

10. The method of claim 9, further comprising:

obtaining two images of the object at each of the first time and the second time via the two camera devices,

wherein the two camera devices are disposed at a fourth distance from each other, and the object in one of the images captured at the first time or the second time is positioned at a fifth distance from the object in the other one of the images.

11. The method of claim 10, wherein the first distance is determined according to the fourth distance and a respective angle of view corresponding to each of the two camera devices, and the second distance or the third distance is determined according to the fourth distance and the corresponding fifth distance.

12. The method of claim 10, further comprising:

determining a sixth distance from a user's face positioned at the first time to the surface,

wherein the second distance is determined by subtracting a predetermined length from the sixth distance, and the first distance, the third distance, or the sixth distance is determined according to the fourth distance and the corresponding fifth distance.

13. The method of claim 10, further comprising:

determining a sixth distance from a user's face positioned at the first time to the surface,

wherein the first distance is determined according to the fourth distance and a respective angle of view corresponding to each of the two camera devices, and the second distance is determined by subtracting a predetermined length from the sixth distance, and the third distance or the sixth distance is determined according to the fourth distance and the corresponding fifth distance.